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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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EXAMINER

TUNG, T

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1743

DATE MAILED: 09/12/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/313,184

Applicant(s)

MIWA BEAL

Examiner

T. TUNG

Group Art Unit

1743

Paper No. 7

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1-1; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-15 is/are pending in the application.
Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-15 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____ ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892 ☐ Notice of Informal Patent Application, PTO-152
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948 ☐ Other _____

Office Action Summary

Art Unit: 1102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-8, 10-15 are rejected under 35 U.S.C. 102(a) as being anticipated by Kato et al.

Kato discloses two electrodes 28, 24 supported on one side of a zirconia solid electrolyte with means 30 for applying a voltage of 450 mV or 1.5 volts between them. The electrodes can be of porous Pt. Electrode 28 is shown to have an area at least twofold that of electrode 24. From the symbol of voltage applying means 30, electrode 28 would be the negative electrode while electrode 24 would be the positive electrode. However, in any event, the polarity of an electrode is not considered to define any structural distinction. Thus, applicant's claim 4 is seen to be met by merely regarding electrode 24 to be the negative electrode. See figures 2, 15 and 21; col. 11, line 10 to col. 12, line 61; col. 18, line 46 to col. 19, line 4; particularly col. 12, line 14; col. 15, line 39; col. 18, lines 51 and 68; col. 24, line 18.

As for claim 12, note that Kato discloses two measurement chambers 6 and 8 and that element 4a is a ceramic body that conducts oxygen ions. As for claims 14 and 15, note that 4b in Kato is a diffusion limiting means.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 10, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hielscher et al.

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Hielscher discloses Pt electrodes 1 and 2 supported on a solid electrolyte. Electrode 2 clearly has an area at least twofold that of electrode 1. Element 14 is a diffusion limiting means leading to electrode 1. See col. 8, lines 19-28. As for claim 5, the patent appears to disclose means for applying a voltage to the electrodes, whose polarity can be reversed, as evidenced by the discussion at col. 5, line 49 to col. 7, line 17. In that case, electrodes 1 and 2 can alternately be the negative electrode and the positive electrode. In any event, polarity of an electrode is not considered to be a structural distinction.

In regard to claims 6 and 7, voltage values are not considered to be a proper apparatus limitation and has not probative value in such a claim.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hielscher et al in view of Kato et al.

If voltage values are construed as proper apparatus limitation, claims 6 and 7 differ in that respect. Claim 8 differs by calling for the solid electrolyte to be of zirconia.

As discussed before, Kato shows applicant's voltage values as well as a zirconia solid electrolyte to be conventional. See col. 15, line 39; col. 24 line 18; col. 11, line 16. It would have

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been obvious for Hielscher to adopt these features, since Hielscher and Kato are analogous and there is no unexpected result.

Claims 1-8, 10, 11, 14, 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Holfelder et al.

Holfelder discloses electrodes 539 and 548 disposed on one side of a zirconia solid electrolyte. Electrode 539 appears to have an area at least twofold that of electrode 548. There is means for applying a voltage of up to 1 volt across the electrodes. See fig. 5; col. 7, lines 22-59; col. 1, lines 37-55; col. 4, lines 51, 63. As before, the polarity of an electrode is not considered to be a structural distinction.

As for claims 14 and 15, strips 550 and 543 provide diffusion limiting means to the electrodes.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holfelder et al in view of Kato et l.

If voltage value is construed to be a proper apparatus limitation, this claim differs in that respect.

As discussed before, Kato shows applying a voltage of 1.5 volts in a solid electrolyte sensor. See col. 24, line 18. It would have been obvious for Holfelder to adopt a voltage source capable of applying 1.5 volts in view of Kato, since the incorporation of known features from analogous prior art is within the skill of the art.

Claims 1, 8, 10, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Nyberg.

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Nyberg discloses electrodes 20 and 22 disposed on one side of a zirconia solid electrolyte 18. Electrode 20 has an area one and half times that of electrode 22. See col. 5, lines 35-46.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al, Hielscher et al, Holfelder et al or Nyberg in view of Japan '773 or Mase et al.

This claim differs by calling for at least one of the electrodes to be embedded in the solid electrolyte. Japan (the English abstract) or Mase (figures 2, 4, 6, 7, 9, 12) shows electrodes to be at least partially embedded in solid electrolyte members.

It would have been obvious for the primary references to embed the electrodes as shown by Japan or Mase, since that provides for better anchoring and protection.

Claims 12, 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12, line 4, it is unclear exactly which element is this "ceramic body....". In fig. 11A, would this element be the solid electrolyte 66 or the diffusion member 63 or something else?

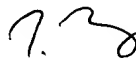
In the specification, page 13, query is made of the discussion at lines 13-16. It is stated that in figures 1, 2A and 2B, the negative electrode 34a with respect to the positive electrode 32a is set to be 2:1 in area. However, these figures appear to show positive electrode 32a to be the larger of the two.

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The examiner can be reached at 703-308-3329. His supervisor Jill Warden can be reached at 703-308-4037. Any general inquiry should be directed to the receptionist at 703-308-0661. A fax number for TC 1700 is 703-305-7719.



Ta Tung

Primary Examiner

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